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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,229	01/03/2002	Masatoshi Arikawa	F-7265	7200

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EXAMINER

WHELPLEY, MICHAEL V

ART UNIT PAPER NUMBER

2671

DATE MAILED: 01/30/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,229

Applicant(s)

ARIKAWA ET AL.

Examiner

Michael V Whelpley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 17, 19, 25-27, 30, 31-33, 39 and 42 is/are rejected.
- 7) ☒ Claim(s) 7-16, 18, 20-24, 28, 29, 34-38, 40 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-4, 25-26, 30-32, and 42 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Xiong, et al. (US Patent 6,434,265). Xiong discloses an apparatus and method of creating virtual reality panoramas.

3. With regard to Claim 1, Xiong describes registering the areas of rectilinear images that overlap into a main memory (Col 4 Lines 54-57). The images are then perturbed until a local error function is minimized (Col 5 Lines 19-23). The perturbation may include affine transformation (Col 10 Lines 9-25). The overlapping images are then displayed on a video monitor 218 (Fig 2).

4. With regard to Claim 2, Xiong describes user interface 230 (Fig 2), which allows a user to manually select and position the images to be registered (Col 6 Lines 5-11).

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5. With regard to Claim 3, the rationale for Claim 1 is incorporated. In addition, Xiong describes the ability of a user to manually intervene in any step in the process (Col 5 Lines 55-63). This manual intervention may include transforming the images prior to the registration step.
6. With regard to Claim 4, the rationale for Claim 2 is incorporated.
7. With regard to Claim 25, the rationale for Claims 1 and 2 is incorporated. In addition, Xiong describes an embodiment of the system as a method for carrying out the same function.
8. With regard to Claim 26, the rationale for Claims 3 and 25 is incorporated.
9. With regard to Claim 30, Xiong describes the system as being controlled by a program residing in system memory (Col 3 Line 61 – Col 4 Line 4).
10. With regard to Claim 31, the rationale for Claim 30 is incorporated.
11. With regard to Claim 32, the rationale for Claim 30 is incorporated.
12. With regard to Claim 42, the rationale for Claim 30 is incorporated.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 19, 27, 33, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong.

15. With regard to Claim 19, Xiong does not specifically disclose implementing the system as a server-client system, in which a server stores and registers the images together. However, it would have been obvious to those of ordinary skill in the art at the time the invention was made to do so, because the step of registering the overlapping images is computationally expensive, and may be completed faster with a server machine than with a client machine.

16. With regard to Claim 27, the rationale for Claim 19 is incorporated.

17. With regard to Claim 33, the rationale for Claim 30 is incorporated.

18. With regard to Claim 39, the rationale for Claim 30 is incorporated.

19. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong as applied to claims 1-4 above, and further in view of Adelson (US Patent 5,706,417). Adelson discloses an image representation format in which an image is encoded as a series of layers, in which each layer comprises maps describing at least the intensity, attenuation, and velocity of the layer.

20. With regard to Claim 5, Xiong does not disclose means for specifying transparency of one image relative to another in the matching process. Adelson describes an attenuation map, which describes the amount of image data to be displayed in a section of the layer relative to others (Col 4 Lines 54-58). If the attenuation value is chosen to be between zero and unity for a section of a layer, that layer will be displayed as transparent (Col 6 Lines 4-7). It would have been obvious to those of ordinary skill in the art at the time the invention was made to combine the

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attenuation map of Adelson with the system of Xiong, because it is desirable to be able to represent a transparent object, such as a window, within a virtual reality scene.

21. With regard to Claim 17, Xiong does not disclose means for displaying two or more images in succession in a specified order. Adelson discloses a velocity map, which describes the change of the points in a layer over time, thus providing information for displaying an animation of the image. (Col 4 Lines 59-63). It would have been obvious to those of ordinary skill in the art at the time the invention was made to add the animation capabilities of Adelson to the system of Xiong, because it is desirable to use animation to create a more realistic virtual reality scene.

22. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong as applied to claims 1-4 above, and further in view of Balogh, et al. (US Patent 5,493,677). Xiong does not disclose means for displaying metadata added to an image when a user selects the image. Balogh discloses a system for the generation, archiving, and retrieval of digital images, in which metadata is added to an image (Col 3 Lines 11-43), and is displayed when the user selects the image (Col 4 Lines 26-27). It would have been obvious to those of ordinary skill in the art at the time the invention was made to add the metadata storage and selection means of Balogh to the system of Xiong, because it is desirable to be able to provide information about specific objects to the users of a virtual reality application.

Allowable Subject Matter

23. Claims 7-16, 18, 20-24, 28-29, 34-38, and 40-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Whelpley whose telephone number is (703) 305-5584. The examiner can normally be reached on 8:30-5, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (703) 305-3900. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-9724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9724.

MW


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